Claims 1-32 (Canceled)

Claim 33 (Currently Amended): An implantable device for measuring at least one physiological parameter indicative of gastroesophageal reflux, the device comprising:

a casing adapted to be implanted and secured within the body of a patient in a location wherein the surrounding environment provides the at least one physiological parameter indicative of gastroesophageal reflux;

a sensor, positioned within the casing, wherein the sensor is adapted to measure the at least one physiological parameter indicative of gastroesophageal reflux;

a transmitter, positioned within the casing, wherein the transmitter is adapted to send a parameter signal indicative of the measured at least one physiological parameter to a receiver located outside of the body of the patient;

a power source, positioned within the casing, that provides power to the sensor and the transmitter;

a processor, positioned within the casing, that periodically induces the sensor to obtain the at least one physiological parameter and periodically induces the transmitter to transmit a parameter signal indicative of the at least one physiological parameter, wherein the processor enables delivery of power from the power source to the sensor only during a first time interval during each measurement cycle when the sensor is sensing the at least one physiological parameter and wherein the processor enables delivery of power from the power source to the transmitter only during a second time interval during each measurement cycle ~~when~~ during which the transmitter ~~is transmitting~~ transmits the parameter signal so that consumption of power by the sensor and the transmitter is reduced during intervals of each cycle other than the first and second interval respectively.

Claim 34 (Previously Presented): The implantable device of Claim 33, wherein the sensor is comprised of a pH sensor that measures a pH of a fluid surrounding the casing when the casing is implanted in the patient's body.

Claim 35 (Previously Presented): The implantable device of Claim 34, wherein the sensor is comprised of an ISFET transistor with an associated amplifier wherein the ISFET transistor is selectively activated in response to the pH of the fluid surrounding the casing such that the ISFET and the associated amplifier can provide a voltage signal to the microprocessor that is indicative of the pH of the surrounding fluid.

Claim 36 (Previously Presented): The implantable device of Claim 34, wherein the sensor is comprised of an antimony electrode with an associated amplifier wherein the antimony electrode is selectively activated in response to the pH of the fluid surrounding the casing such that the antimony electrode and the associated amplifier can provide a voltage signal to the microprocessor that is indicative of the pH of the surrounding fluid.

Claim 37 (Previously Presented): The implantable device of Claim 33, wherein the transmitter is comprised of an RF transmitter that transmits a digital signal indicative of the physiological parameter that is indicative of gastroesophageal reflux.

Claim 38 (Original): The implantable device of Claim 33, wherein the processor initiates a measurement cycle wherein the sensor senses the physiological parameter and the transmitter transmits a parameter signal corresponding to the physiological parameter measured by the sensor approximately every 6 seconds.

Claim 39 (Canceled).

Claim 40 (Previously Presented) The implantable device of Claim 33, wherein the first interval is approximately 20 ms in length and the second interval is approximately 60 ms in length.

Claim 41 (Original) The implantable device of Claim 33, further comprising a non-volatile memory accessible by the processor, wherein the processor is adapted so that calibration information can be stored in the non-volatile memory prior to implantation of the device into the patient.

Claim 42 (Currently Amended) The implantable device of Claim 41, wherein the ~~parameter signals transmitted by the transmitter include~~ processor within the casing applies the calibration data to the physiological parameter such that the receiver external to the patient receives a calibrated signal indicative of the physiological parameter that is indicative of gastroesophageal reflux.

Claim 43 (Previously Presented) A method of measuring a physiological parameter indicative of gastroesophageal reflux using an implanted sensor, the method comprising:

(a) providing power to a sensor circuit for a first time interval so as to obtain a parameter measurement indicative of gastroesophageal reflux;

(b) ceasing providing power to the sensor circuit following the first time interval;

(c) providing power to a transmitter circuit during a second time interval, following the first time interval, so that a parameter signal indicative of the parameter measurement obtained by the sensor circuit can be transmitted to a receiver located outside of the body of the patient; and

(d) ceasing providing power to the transmitter circuit following the second time interval.

Claim 44 (Previously Presented) The method of Claim 43, wherein providing power to the sensor circuit comprises providing power to an ISFET transistor that is electrochemically activated by a pH of a fluid surrounding the implanted sensor and that produces a voltage signal that is proportionate to the pH of the fluid surrounding the implanted sensor.

Claim 45 (Previously Presented) The method of 43, wherein power is provided to the sensor for approximately 20 ms during the first time interval.

Claim 46 (Previously Presented) The method of Claim 43, further comprising providing a digital signal representative of the physiological parameter measured by the sensor so that providing power to the transmitter circuit results in the digital signal being transmitted to the receiver located outside of the body of the patient.

Claim 47 (Previously Presented) The method of Claim 43, wherein providing power to the transmitter circuit during a second time interval comprises providing power to a RF transmitter.

Claim 48 (Previously Presented) The method of Claim 43, wherein power is provided to the transmitter for approximately 60 ms during the second time interval.

Claim 49 (Previously Presented) The method of Claim 43, wherein the acts (a) and (b) are periodically repeated every 6 seconds and acts (c) and (d) are periodically repeated every 12 seconds.

Claims 50-54 (Canceled)

Claim 55 (Previously Presented): The implantable device of Claim 33, wherein the casing is adapted to be implanted and secured within the esophagus of the patient.

Claim 56 (Previously Presented): The method of Claim 43, wherein providing power to the sensor circuit comprises providing power to an antimony electrode with an associated amplifier, the antimony electrode and the associated amplifier electrochemically activated by a pH of a fluid surrounding the implanted sensor to produce a voltage signal that is proportionate to the pH of the fluid surrounding the implanted sensor.